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United States Senate

WASHINGTON, DC 20510-1903

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COMMITTEES:
COMMERCE, SCIENCE, AND
TRANSPORTATION

OCEANS, ATMOSPHERE, FISHERIES AND
COAST GUARD SUBCOMMITTEE

FINANCE

INTELLIGENCE

RANKING MEMBER, SMALL BUSINESS

The Honorable Daniel K. Inouye, Chairman
The Honorable Thad Cochran, Vice Chairman
Senate Committee on Appropriations
S-131, U.S. Capitol
Washington, D.C. 20510

The Honorable Byron L. Dorgan, Chairman
The Honorable Robert F. Bennett, Ranking Member
Appropriations Subcommittee on Energy and Water Development
184 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Chairmen, Vice Chairman, and Ranking Member,

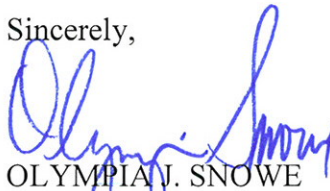
I am writing to respectfully request your support for the funding of attached items in the Fiscal Year 2011 Energy and Water Development Appropriations Bill.

I certify that neither I nor any of my immediate family has a pecuniary interest in the congressionally directed spending items that I have requested in the FY2011 Energy and Water Development Appropriations Bill, consistent with the requirements of paragraph 9 of Rule XLIV of the Standing Rules of the Senate. I further certify that I have posted a description of the items requested on my official website, along with the accompanying justification.

I appreciate your serious consideration of these funding requests. On the following pages, I have provided the answers to your specific questions about the projects.

Once again, thank you for your time and consideration. Please feel free to contact my staff with any further questions.

Sincerely,



OLYMPIA J. SNOWE
United States Senator

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Town of Chebeague Island, Stone Wharf Dredging Feasibility Study, Chebeague Island, Maine – \$200,000.

The Town of Chebeague Island has requested assistance from the Army Corps of Engineers to obtain a Section 107 dredging feasibility study the area at the Stone Wharf on Chebeague Island. This project is closely aligned with the mission of the Army Corps of Engineers under Section 107 authority, Small Navigation Projects, by serving the safe navigation needs of multiple commercial interests whose access to this essential transportation link is critical to the economic viability of the community. The Stone Wharf is the only town-owned wharf and is the primary location for emergency rescue operations, passenger ferry, commercial fishing, barging, and passenger operations. This is the access for the ferry carrying schoolchildren, commuters, residents, medical, police, rescue, and service personnel, among others. The Maine Department of Transportation has recognized the ferry as an essential transportation service.

Also requested in this initial appraisal is a study of potential navigation improvements to the area around the Stone Wharf in order to increase the depth of water beside the wharf. Such improvements would facilitate its use by all commercial and fishing interests. Commercial fishing is the core economic activity of the Town of Chebeague Island. Direct access to the Stone Wharf is currently limited to about three hours per day due to tidal constraints. This feasibility study request has broad community support from multiple community organizations, health care practitioners, the Superintendent of Schools, the Fire Department, and the ferry system.

Cobscook Bay Resource Center, Environmental Studies, Monitoring & Public Outreach for Eastport Tidal Energy Project, Eastport, Maine – \$700,000.

Ocean energy has emerged within Maine's environmental and energy technology sector as a priority opportunity with paradigm-shifting implications for the Maine economy in general and economically-challenged Downeast coastal communities in particular. Tidal energy development is the leading edge of a much broader ocean energy industry that will eventually include near-shore and offshore wind, all of which will dramatically improve Maine communities. Rigorous and credible environmental monitoring and testing is absolutely critical to any ocean energy development. The general public and existing users of the marine environment need to know the impacts of renewable energy projects. For environmental monitoring and testing to be credible it is essential that people understand the purpose of the monitoring, the methods employed, the results, and what the data means. This project will benefit communities in Maine by providing the information people need for evaluating potential impacts of ocean energy development.

A national effort to increase renewable energy development and reduce dependence on fossil fuels requires a long-term public policy commitment. Tidal energy will provide emission free electricity in the first phase of ocean energy development. The funding of this project will support deployment of the first commercial-scale tidal energy project in the U.S., creation of a comprehensive environmental monitoring program, and development of a public information exchange and dissemination capacity with the goal of setting the standard for future ocean energy developments in Maine and the U.S. In

the larger picture, this project increases energy independence & security, creates over 250 jobs statewide in five years, spurs investment in Maine of up to \$1 billion in the next five-to-seven years, and creates a model for environmentally sensible ocean energy development.

Elmet Technologies, Inc., Energy Efficient Sintering Furnaces, Lewiston, Maine – \$500,000.

Elmet Technologies Inc. is a manufacturer of products made of tungsten and molybdenum (which is used in Javelin and Hellfire missiles), materials that have high strength and tolerance to heat and is the only US-owned manufacturer of molybdenum and tungsten mill product. Elmet was founded in 1929 in Lewiston, Maine, and has remained there through three ownership changes. They currently employ 194 people, 188 of which are in Maine, with above average wages and benefits. Elmet faces significant competition from foreign competitors that have cost advantages from being larger with greater automation and other competitors who have significantly lower labor costs primarily in China.

Elmet is looking for federal assistance to fund half the cost of two energy efficient sintering furnaces. Manufacturing refractory metal product is a utility intensive process. Past materials and labor, utilities are their highest cost. In 2009, Elmet spent \$1.3 million on electricity (approximately 17 million KWh) and is projecting a spend of \$1.7 million in 2010. The predominance of their electricity spent comes from various furnaces throughout the facility. Elmet is currently running five sintering furnaces that use 500,000 KWh to 650,000 KWh per year. These furnaces are continuously run and product is “pushed” through them. While this is an efficient process if the furnace is constantly full, it is very inefficient when it sits empty for lack of volume or personnel. It takes 3 weeks to bring one of these furnaces down in temperature and another 3 weeks to bring it back up in order to not damage the insulating bricks in the furnace, a process that is impractical for anything but a long shutdown.

Elmet is considering multiple “refractoryless” furnaces, which would not have the internal bricks and would be turned on and off to sinter materials. They estimate the cost of two of these furnaces to be around \$1 million. Such furnaces would allow Elmet to run the appropriate number of “push” furnaces 24/7 and flex for demand with the “refractoryless” furnaces without having to bring additional “push” furnaces online with low utilization. This would represent the most efficient way to run this particular operation from an electricity usage standpoint.

Maine Composites Alliance, Maine Wind Supply Chain Consortium, Portland, Maine – \$2,000,000.

In order to manufacture the large composite structures used in platforms and wind turbine blades, Maine must create and support new manufacturing technology. This new industry requires a trained workforce capable of manufacturing these advanced composite structures. The Maine Wind Supply Chain Consortium (MWSCC) has been organized to

develop new composite technology for floating offshore platforms and wind turbine components. The consortium will be lead by the Maine Composites Alliance (501 c 3 non-profit), and will include the Maine Advanced Technology and Engineering Center (www.matc.smmccme.edu) and Broadreach Technologies (a Maine-based joint venture) (www.brtechll.com). The consortium will include additional industry partners.

This project will support the development of offshore wind technology. The Federal Government through the DOE and NIST has invested \$25 million in efforts to develop offshore wind technology lead by the University of Maine. This project will directly affect the ability of the Maine composites industry to develop the necessary supply chain and create the jobs to support that effort. The project is expected to retain twenty-five jobs and will create another twenty-five.

University of Maine, Maine Offshore Wind Initiative, Orono, Maine – \$20,000,000.

Maine has the equivalent of 40 nuclear power plants of offshore wind energy within 50 nautical miles. If only 5 percent of this wind resource is captured, Maine can still generate the equivalent of two nuclear power plants of electricity – that is 5 GW of wind or 2 GW of conventional power. This is enough electricity to heat every home with heat pumps and to fill every plug-in electric vehicle in the state's 500,000 vehicle fleet. The construction of 5 GW of offshore wind will attract \$20 billion of private capital to Maine and would represent by far the largest construction project in the State's history, resulting in over 10,000 jobs.

Since the vast majority of the offshore wind resource in Maine and in the US is located in deep water (>200ft), an offshore wind research center is needed to support development of floating platform technology. The effort will build on UMaine Composites laboratory expertise in wind energy, as well as other expertise at UMaine including GIS, geological sciences, earth sciences, environmental sciences, fish, and wildlife.

Total investment required will be approximately \$200 million over ten years, with funds coming from State, federal, and private sector sources. Large-scale private investment to build the wind farms and associated electrical infrastructure will be in addition to the \$100 million required to lead the way for commercial development. The State recently authorized a \$5 million revenue bond to pay for expansion of the AEWCF facility at UMaine to develop and test composite wind blades up to 70 meters in length; construction started in 2009. The FY2011 funding will be leveraged by additional investment from the State of Maine, commercial research and testing contracts, and in-kind support from the National Renewable Energy Lab. If \$5 million is appropriated in FY2011, an estimated an additional \$3 million will be available from these other sources.

University of Maine, Next Generation Composite Wind Blade Manufacturing Technologies, Orono, Maine – \$3,000,000.

Currently, the majority of composite wind blades are manufactured in Asia and South America. However, the increasing demand for wind blades offers an opportunity for

manufactures in Maine and the US to compete in this market. At the 2008 Washington International Renewable Energy Conference (WIREC) Dr. Dan Arvizu – Director of the Department of Energy’s National Renewable Energy Lab – stated that U.S. composite wind blade manufacturers will be able to compete if they can increase productivity by 30 percent. Further, prominent wind energy developers are seeking local suppliers of composite wind blades, with the rationale of reducing both the cost and carbon footprint associated with long-distance transportation of wind blades from foreign manufacturers to wind power sites in the U.S. To respond to this opportunity, UMaine’s Composites Center has developed a technology commercialization plan for Next-Generation Composite Wind Blades. This plan includes:

- The development and scale up of advanced manufacturing processes for large composite wind blades. These processes include automated composite tape placement, and should reduce production labor and time by up to 50 percent.
- The development of a recyclable, thermoplastic composite wind blade. With up to 15,000 composite wind blades to be put into service every year, the industry needs an environmentally-friendly, recyclable composite manufacturing technology. The use of thermoplastic composites will result in zero-waste production, with a wind blade that can be fully recycled at the end of its service life.

The \$3 million is requested for the development and testing of next generation composite wind blade manufacturing technologies. This research has the potential to add hundreds of new jobs to Maine’s distressed composite boatbuilding industry. In addition, it leverages the recent \$5 million expansion of the AEWC Center, for a full-scale wind blade testing facility. Scheduled to be completed in late 2009, this state-funded expansion will provide the AEWC Center with the ability to manufacture and test a full-scale, 55 meter composite wind blade.

University of Maine, Maine Tidal Power Initiative, Orono, Maine – \$3,000,000.

Energy independence is critical to maintain our standard of living for the next generation. It is becoming clear that no one source of energy will provide all of our needs. Tidal energy represents one potential source of energy in some regions of the country. Maine has potential to become the center for tidal energy in United States because of the unique coastal geography that produces favorable tidal conditions. In fact, the Quoddy region has tidal energy with the greatest commercial potential of any site in the 48 contiguous United States. The Maine Tidal Power Initiative has thus far emphasized research on commercial-scale tidal power development. This third year request will be used to conduct physical, biological, and engineering research while monitoring the deployment of the most advanced commercial tidal energy site in the United States.

Research by the University of Maine to date has emphasized the development of environmental protocols applicable at a range of tidal energy sites. Environmental assessment is the largest hurdle in the deployment of these technologies, it also requires the longest implementation time. As a result, the environmental assessment was prioritized so that baseline data would be available prior to deployment. This effort has

resulted in an approach the University and its partners are working to have accepted by regulatory agencies. Design requirements imposed by the marine ecosystem and the amount of energy that can be extracted from the site are necessary to evaluate the economic return. Results from years one and two will develop into standardized environmental and resource assessment protocols. Field measurements obtained at the tidal energy sites, laboratory results and model simulations, will then be used with ecological analyses to determine the economic potential and potential challenges of a range of tidal sites (community-scale to commercial-scale).

University of Southern Maine, The Wise Laboratory of Environmental and Genetic Toxicology, Portland, Maine – \$1,750,000.

Increasing investments in Science, Technology, Engineering, and Math (STEM) is a key step to economic recovery and long term economic success for the United States. Within STEM in Maine, the University of Southern Maine (USM) leads the University of Maine System in bioscience research. At USM, the Maine Center for Toxicology and Environmental Health (MCTEH) serves as the focal point of bioscience research and provides USM with a distinctive research identity. Specifically, MCTEH is developing a nationally competitive research program for studying the health effects of contaminants that pollute the environment, including the effects on the health of humans and marine species and for studying how to prevent these effects.

The success and growth of MCTEH is limited by a lack of sufficient laboratory space. This proposal seeks funds to complete the remaining two-thirds of the 4th floor, creating new state-of-the-art toxicology laboratories in molecular biology, environmental toxicology and chemoprevention and a cutting edge marine cell culture laboratory. Locating the Wise Laboratory – the lead laboratory of MCTEH – entirely on the 4th floor of the Bioscience Research Wing will free other laboratories, providing needed space to allow existing MCTEH faculty to expand their research programs and to recruit additional exceptional researchers in biomedical-related areas.

MCTEH is developing research that will have important implications for the improvement of national and international health. For example, MCTEH data has been cited and used by the Maine State Legislature, the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH). In addition, MCTEH is one of the leading groups in understanding the potential for depleted uranium to damage DNA and cause cancer, which is now a major health concern of our soldiers and internationally given its use in a number of military actions.